



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,912	09/19/2003	Jeanne E. Haubrich	SIPXP054C1	6475

46006 7590 12/14/2006

HOWREY LLP
C/O IP DOCKETING DEPARTMENT
2941 FAIRVIEW PARK DRIVE, SUITE 200 & 300
FALLS CHURCH, VA 22042-2924

EXAMINER

CHAN, SING P

ART UNIT PAPER NUMBER

1734

DATE MAILED: 12/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/666,912

Applicant(s)

HAUBRICH ET AL.

Examiner

Sing P. Chan

Art Unit

1734

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-66 is/are pending in the application.
- 4a) Of the above claim(s) 12,13,17,19-27,29-31,38,46-48,53 and 61-63 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11,14-16,18,28,32-37,39-45,49-52,54-60 and 64-66 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date See Continuation Sheet.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of species in the reply filed on September 29, 2006 is acknowledged.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to

be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 50-52 and 54-56 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 42-44 and 46-48 of copending Application No. 10/665,992. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 50-52 and 54-56 are generic to the method recited in claims 42-44 and 46-48 of copending Application No. 10/665,992. That is, claims 42-44 and 46-48 fall entirely within the scope of claims 50-52 and 54-56 or in other words, claims 50-52 and 54-56 are anticipated by claims 42-44 and 46-48 of the copending Application No. 10/665,992. Specifically, the instant claims 50-52 and 54-56 do not recite "the substrate and the patterned thin film structure formed thereon are suitable for use as an IMD decorated film" and therefore, are generic to claims 42-44 and 46-48 of the copending Application and encompassing these claims.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 1734

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-7, 9-11, 14-16, 18, 32, 33, 44, 45, 49, and 60 are unpatentable under 35 U.S.C. 102(b) as being anticipated by Aufderheide (U.S. 4,714,631).

Regarding claims 1, 2, 10, 11, 14, and 60, Aufderheide discloses a method of forming patterned layers onto substrates. The method includes printing a pattern of strippable undercoating, with the undercoating comprising 5 to 80% solid particulate material (Col 15, lines 1-3), onto a substrate (Col 4, lines 15-20 and Col 4, lines 37-40), depositing a metal layer onto the coated substrate (Col 4, lines 47-60), washing the coating and the metal layer adhering to the coating off with water (Col 4, lines 61-66), which is an aqueous solution and forming a conductive pattern on the substrate (Col 5, lines 6-11).

Regarding claim 5, Aufderheide discloses the undercoat includes polyvinyl alcohol, poly (acrylic acid), and polyvinyl pyrrolidone. (Col 6, lines 40-44)

Regarding claims 3, 4, and 6, Aufderheide discloses the strippable undercoating comprising water-soluble film forming polymer (Col 6, lines 8-12), i.e. binder, such as polyvinyl alcohol, poly (acrylic acid), and polyvinyl pyrrolidone (Col 6, lines 40-44).

Regarding claim 7, Aufderheide discloses solid particulates include silica, carbon black, aluminum powder, TiO₂, and glass beads. (Col 7, lines 22-24)

Regarding claim 9, Aufderheide discloses the undercoating includes plasticizers. (Col 7, lines 29-32)

Art Unit: 1734

Regarding claims 15 and 16, Aufderheide discloses the deposition material includes aluminum, titanium, nickel, copper, titanium nitride, silicon dioxide, and aluminum oxide. (Col 1, lines 37-49)

Regarding claim 18, Aufderheide discloses the metal layer is deposited by sputtering. (Col 7, lines 45-48)

Regarding claims 19 and 20, Aufderheide discloses vacuum deposition of the metal layer. (Col 1, lines 37-49)

Regarding claim 32, Aufderheide discloses the substrate includes any material including plastic films. (Col 15, lines 22-29)

Regarding claim 33, Aufderheide discloses the patterned substrate includes conductive pads and track is connected to external electrical circuitry (Col 5, lines 3-24) or a portion of a flexible printed circuit board.

Regarding claims 44, 45, and 49, the conductive tracks are electrode or segment electrode (Col 5, lines 3-24)

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Art Unit: 1734

Aufderheide (U.S. 4,714,631) as applied to claim 1, further in view of Voss et al (U.S. 6,426,143).

Aufderheide as disclosed above is silent as to the filler for the undercoating includes polymeric composite particle. However, providing polymeric particle as filler is well known and conventional as shown for example by Voss et al. Voss et al discloses a method of forming protected printed conductor. The method includes providing a primer for the metal coating, wherein the primer includes organic and/or inorganic filler such as pulverized high melting point plastics, silica, carbon blacks, and TiO_2 , which are all equivalents. (Col 5, lines 27-32)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide any filler for the polymer coating such as pulverized high melting point plastics, silica, carbon blacks, and TiO_2 as disclosed by Voss et al in the method of Aufderheide to provide any filler for the coating, which are all equivalents.

8. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aufderheide (U.S. 4,714,631) as applied to claim 1, further in view of Warther (U.S. 5,495,981).

Aufderheide as disclosed above recited applying the undercoating by screen printing. Aufderheide is silent as to printing by flexographic, photographic, lithographic, gravure, thermal, inkjet, and stamp printing. However, printing by flexographic, photographic, lithographic, gravure, thermal, inkjet, and stamp printing is well known and conventional as shown for example by Warther. Warther discloses method of printing a substrate by screen, flexographic, photographic, lithographic, gravure,

thermal, inkjet, and stamp printing. (Col 11, lines 3-25)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to print the substrate with any printing method such as screen, flexographic, photographic, lithographic, gravure thermal, inkjet, and stamp printing as disclosed by Warther in the method of Aufderheide, which are all equivalents.

9. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aufderheide (U.S. 4,714,631) as applied to claim 32, and further in view of Todd et al (U.S. 5,368,902).

Aufderheide as disclosed above is silent as to the forming process is a roll-to-roll process. However, forming patterned thin film using a roll-to-roll process is well known and conventional as shown for example by Todd et al. Todd et al discloses a method of forming patterned thin film. The method includes providing substrate in roll and unwinding and rewinding the rolled substrate to forming the patterned thin film. (Col 3, lines 24-36)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the substrate on a roll and forming the thin film by a roll-to-roll process as disclosed by Todd et al in the method of Aufderheide to provide an patterned thin film economically. (See Todd et al, Col 1, lines 33-35)

10. Claims 35-37, 39-41 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable under Aufderheide (U.S. 4,714,631) in view of Todd et al (U.S. 5,368,902) as applied to claim 34, and further in view of Penterman et al (U.S. 2002/0196390).

Aufderheide as modified by Todd et al discloses the patterned thin film on the

substrate in a roll-to-roll process but is silent as to the process is for fabricating a display. However, using a roll-to-roll method for the fabricating a display is well known and conventional as shown for example by Penterman et al. Penterman et al discloses a method of forming stacked liquid cells or electro-optical liquid crystal cells (Page 1, Paragraph 3), which are electrophoretic cells or display and may be of any type such as an active matrix or a passive matrix cell (Page 6, Paragraph 83). The method includes providing a substrate, applying electrode layer to the substrate with a wet deposition method such as coating or printing method (Page 6, Paragraphs 84 and 94), forming the liquid crystal layers onto the patterned substrate, applying a thin polymeric substrate layer (Page 6, Paragraphs 88-90), which would close and seal the liquid crystal layers, and then applying a top electrode layer adjacent the polymeric layer, it may be attached to a separately manufactured cell to form a complete stack (Page 6, Paragraph 94 to Page 7, Paragraph 95). The display in Figure 4 includes a stacked liquid cell (40) and (60) with stacked liquid cell (60) includes an in-plane switching electrode layer (66) and stacked liquid cell (40) has a sandwich arrangement to switching liquid crystal layer (Page 6, Paragraph 84 and Page 7, Paragraph 99), which the display is dual-mode switching and the liquid crystal layer includes solvent, inks, dispersions, dyes, pastes, gels with optical, mechanical stress, chemical reactions, electric and magnetic fields or currents and particular relevance are electro-optical liquid layers (Page 3, Paragraphs 27-30), which would includes charged particles, which can be driven with sandwich electrodes. Furthermore, the method can be performed as a batch process or a continuous process even for use in a roll-to-roll process (Page 4, Paragraph 58).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide attaching a patterned thin film to a display device with dual-mode switching and sealing the cell with polymer layer as disclosed by Penterman et al in the method of Aufderheide as modified by Todd et al to allow for the forming of liquid crystal layer and the substrate layer at the same time and reduces time of manufacture. (See Penterman et al, Page 4, Paragraph 57)

11. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aufderheide (U.S. 4,714,631) in view of Todd et al (U.S. 5,368,902) and Penterman et al (U.S. 2002/0196390) as applied to claim 41, further in view of Rogers et al (U.S. 6,337,761).

Aufderheide as modified by combination of references is silent as to forming the electrophoretic cells by embossing. However, forming the electrophoretic cells by embossing is well known and conventional as shown for example by Rogers et al. Rogers et al discloses a method of forming electrophoretic display. The method includes forming members (24) vertically interconnect with the first and second electrodes to define enclosed cells and the members are easy fabricated by depositing patterned layers techniques such as photolithography, electron-beam lithography, laser direct writing, two and multi-photon patterning, inkjet printing, microcontact printing, screen printing, and embossing with rigid masters, which all functional equivalents. (Col 5, lines 2-29)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to form electrophoretic cells with any patterning method such as

Art Unit: 1734

photolithography, electron-beam lithography, laser direct writing, two and multi-photon patterning, inkjet printing, microcontact printing, screen printing, and embossing with rigid masters as disclosed by Rogers et al in the method of Aufderheide as modified by combination of references to provide any method of forming the cells, which are all functional equivalents.

12. Claims 57-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aufderheide (U.S. 4,714,631) in view of Brummett et al (U.S. 4,368,281).

Aufderheide discloses a method of forming patterned layers onto substrates. The method includes printing a pattern of strippable undercoating, with the undercoating comprising 5 to 80% solid particulate material, onto a substrate (Col 4, lines 15-20 and Col 4, lines 37-40), depositing a metal layer onto the coated substrate (Col 4, lines 47-60), washing the coating and the metal layer adhering to the coating off with water (Col 4, lines 61-66) and forming a conductive pattern on the substrate (Col 5, lines 6-11). The substrate with the conductive pattern is capable of being use as an in-mold decoration decorated film, which satisfying the requirement of intended use as recited by the claim. Aufderheide is silent as to the pattern is applied to both surfaces of the substrate. However, applying pattern to one or both surfaces of the substrate is well known and conventional as shown for example by Brummett et al. Brummett et al discloses printing the pattern to one or both side of the substrate for forming pattern. (Col 5, lines 39-49)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide pattern on one or both surfaces of the substrate as

disclosed by Brummett et al in the method of Aufderheide as either one or both surface are all equivalents.

13. Claims 64-66 are rejected under 103(a) as being unpatentable over Aufderheide (U.S. 4,714,631) as applied to claim 1, and further in view of Mori (JP 57-177029).

Aufderheide as disclosed above is silent as to applying an adhesive layer to the deposited metal coating and undercoating and peeling off the adhesive layer and removing the portion of the metal coating and undercoating. However, applying an adhesive layer to the deposited metal coating and undercoating and peeling off the adhesive layer to remove the coating from the substrate is well known and conventional as shown for example by Mori. Mori discloses a method of selectively metallizing a plastic film. The method includes applying a film in a pattern to the plastic film, depositing a metal vaporized layer onto the plastic film with the pattern film, applying sheet with an adhesive layer onto the metal layer, and peeling off the metal layer and the film to leave the metal layer on the non-printed portion of the plastic film. (See English abstract of JP 57-177029)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide an adhesive sheet, applying the sheet to the metallized layer of the plastic film and peeling the sheet to remove portion of the metallized layer from the plastic film and leaving a portion of the metallized layer on the non-printed portion as disclosed by Mori in the method of Aufderheide to provide a method forming

a metallized plastic film without the need to immerse the film in solvent. (See English abstract of JP 57-177029)

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sing P. Chan whose telephone number is 571-272-1225. The examiner can normally be reached on Monday-Thursday 7:30AM-11:00AM and 12:00PM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher A. Fiorilla can be reached on 571-272-1187. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1734

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Chan Sing Po

SPC

CA Fiorilla

CHRIS FIORILLA
SUPERVISORY PATENT EXAMINER

AU 1734

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :10/14/03&1/23/04&2/24/04&8/18/05&11/16/05&12/30/05.